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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,353	10/12/2004	Katsura Hirai	KON-1944	6500

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EXAMINER

PERT, EVAN T

ART UNIT PAPER NUMBER

2826

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/511,353

Applicant(s)

HIRAI ET AL.

Examiner

Evan Pert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.  
4a) Of the above claim(s) 3,4 and 13-31 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,2 and 5-12 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 12 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 3, 4 and 13-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on September 28, 2005.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-2 and 5-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

#### ***--combining with--***

Particularly, in claim 1, the phrase "*combining with the particles*" is ambiguous, because the claimed "combining" could be limited to a chemical bonding between particle and organic semiconductor compound, but could also be a mixing or dispersing, or a coating of particles, or any other bringing together.

For purposes of examination, the grammatically awkward phrase "combining with the particles" is interpreted as being equivalent to --combined with the particles--, with the meaning of "combined" taken to be, in a broadest reasonable dictionary reading, "brought together" as any kind of combination or mixture.

**--particles--**

Claim 1 is also ambiguous because “particles” are always present in combination with an organic semiconductor compound, as “holes” and “electrons” that are *combined* in the semiconducting material [see US 6,107,117; col. 1, lines 26-33].

While the contextual meaning of “particles” should not be interpreted as including sub-atomic “particles,” such as “electrons,” the plain meaning of claim 1 does not preclude such interpretation; therefore, claim 1 does not “particularly point out” applicant’s invention in accordance with the statutory requirement of 35 USC 112.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al. (US 4,590,541).

The ‘541 patent discloses an “organic semiconductor composition” (title, abstract, etc.) comprising metal particles (i.e. “fine powder of metals” per abstract) and an “organic semiconducting compound” (i.e. a compound identified as a “CN group-bearing organic semiconductive ion radical salt”), inherently *combining* with the particles (the particles being an “additive” that “suppresses evolution of toxic gas”).

5. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Ootsuchi et al. (JP 3-273687).

The JP '687 document discloses an "organic semiconductor composition" (a composition of organic semiconductor 1 and tungsten particles 2) comprising metal particles (i.e. tungsten (W) particles) and an "organic semiconducting compound" (i.e. an "organic semiconductor" with "large mobility") combining with the particles (i.e. the particles are "combining" with the organic semiconductor 1 because the metal particles are "dispersed" in the organic semiconductor 1 to form a unitary radiation absorbent material for a radiation detector).

6. Claims 1-2 and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0 488 321 A1.

For purposes of this rejection, the preamble reciting "an organic semiconducting composition" is not given significant patentable weight. See MPEP 2111.02.

The '321 document, as indicated by the International Search Report, anticipates claims 1, 2, 5 and 6 because the '321 document discloses "metal particles" that are "coated with a polymer consisting of polythiophene." [p. 3, lines 3-12].

Since the '321 document discloses a "polythiophene derivative" that is "combined with" (i.e. coated onto) metal particles, the '321 document discloses an organic semiconducting compound (i.e. polythiophene) that is "combined with" (i.e. coated onto) metal particles, wherein "polythiophene" is a pi-conjugated polymer.

***Allowable Subject Matter***

7. Claims 7-12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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8. The following is a statement of reasons for the indication of allowable subject matter: While the prior art discloses the use of regioregular poly(3-alkylthiophene) as an organic semiconducting material for forming an electronic device (e.g. US 6,621,099 and US 6,107,117), the prior art does not suggest that the regioregular poly(3-alkylthiophene) be combined with metal particles.

Applicant's claimed composition of a regioregular poly(3-alkylthiophene) combined with metal particles, in the context of applicant's written description, is a composition with high mobility useful as a material for forming a channel of an organic semiconductor transistor, for example.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evan Pert whose telephone number is 571-272-1969. The examiner can normally be reached on M-F (7:30AM-3:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ETP

November 23, 2005

  
**EVAN PERT**  
**PRIMARY EXAMINER**